

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
12 September 2003 (12.09.2003)

PCT

(10) International Publication Number  
**WO 03/074490 A1**

- (51) International Patent Classification<sup>7</sup>: **C07D 219/10**
- (21) International Application Number: **PCT/KR02/00392**
- (22) International Filing Date: **7 March 2002 (07.03.2002)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (71) Applicant (for all designated States except US): **SAMJIN PHARMACEUTICAL CO., LTD.** [KR/KR]; 338-8, Seokyo-dong, Mapo-gu, 121-739 Seoul (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHO, Eui-Hwan** [KR/KR]; #105-101, Hyundai 1-cha APT., 653, Kaepo 1-dong, 135-241 Seoul (KR). **CHUNG, Sun-Gan** [KR/KR]; #206-1603, LG village APT., 530 Keum-gok-dong, Kwonson-gu, Suwon, 151-013 Kyungki-do (KR). **LEE, Sun-Hwan** [KR/KR]; #105-403, Daerim APT., Dokgok-dong, Pyongtaek, Kyungki-do, 459-100 Kyungki-do (KR). **KWON, Ho-Seok** [KR/KR]; #506-1105, Sindonga APT., 1274, Kwonson-dong, Kwonson-gu, Suwon, 441-390 Kyungki-do (KR). **KANG, Dong-Wook** [KR/KR]; #708-1306, Chowon Buyoung APT., 896-6, Pyeongchon-dong, Dongan-gu, Anyang, 431-070 Kyungki-do (KR).
- (74) Agents: **JANG, Seongku et al.**; 19th FL, KEC Bldg., 275-7, Yangjae-dong, Seocho-ku, Seoul 137-130, (KR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **9-AMINOACRIDINE DERIVATIVES AND PROCESS FOR THE PREPARATION THEREOF**

(57) Abstract: The invention relates to pharmaceutical preparations containing a dibenzocyclooctane lignan derivative for prevention and treatment of neurodegenerative disease.

WO 03/074490 A1

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR02/00392

**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 C07D 219/10**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 : C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CA ON-Line

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|-----------|--|-----------------------|
| A         | WO 00/37447 A1 (SAMJIN PHARMACEUTICAL CO., LTD.), 29. 06. 2000, see abstract, claims.  | 1-3                   |
| A         | Su T. et al. '9-Substituted acridine derivatives with long half-life and potent antitumor activity: Synthesis and structure-activity relationships.' In: J. Med. Chem., 1995, Vol. 38, No. 17, pages 3226-3235, see entire document. | 1-3                   |
| A         | US 4575553 A (BRISTOL-MYERS COMPANY), 11. 03. 1986, see claims.  | 1-3                   |
| A         | US 5354864 A (SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH), 11. 10. 1994, see claims.  | 1-3                   |
| A         | WO 91/05770 A1 (SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH), 02. 05. 1991, see claims.  | 1-3                   |

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

09 DECEMBER 2002 (09.12.2002)

Date of mailing of the international search report

10 DECEMBER 2002 (10.12.2002)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

HAN, Hyung Mee

Telephone No. 82-42-481-5601



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR02/00392

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)         | Publication<br>date          |
|---|---------------------|------------------------------------|------------------------------|
| WO 00/37447 A1                            | 29. 06. 2000        | US 20020111491 A1<br>EP 1062207 A1 | 15. 08. 2002<br>27. 12. 2000 |
| US 4575553 A                              | 11. 03. 1986        | EP 165592 A2<br>JP 61083163 A2     | 27. 12. 1985<br>26. 04. 1986 |
| US 5354864 A                              | 11. 10. 1994        | WO 9323049 A1<br>AU 4386693 A1     | 25. 11. 1993<br>13. 12. 1993 |
| WO 91/05770 A1                            | 02. 05. 1991        | US 5229395 A<br>AU 6626090 A1      | 20. 07. 1993<br>16. 05. 1991 |